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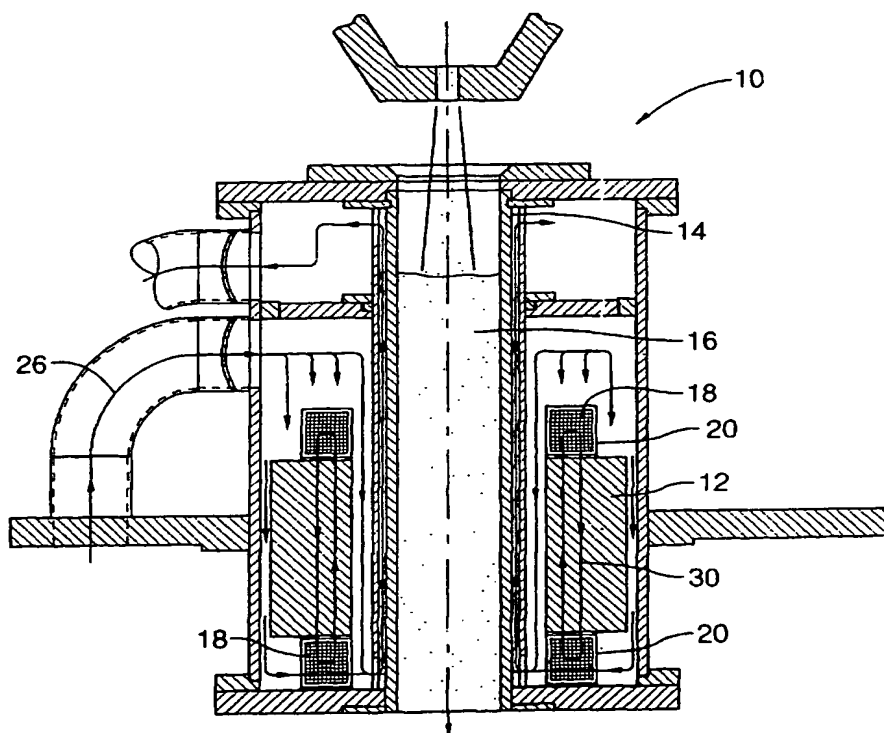
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[Continued on next page]

(54) Title: **COOLING ELECTROMAGNETIC STIRRERS**



(57) Abstract: Cooling of the electrical coils of an electromagnetic stirrer is effected using a ferrofluid. An electromagnetic stirrer, comprising: a cylindrical housing having an axial mold tube for receiving molten metal, an inner wall spaced from the mold tube and defining a cooling water flow channel, an electromagnetic stirring assembly surrounding the inner wall and spaced therefrom and from an outer wall, said stirring assembly comprising a yoke, a plurality of magnetic poles and electrical windings mounted on each of the magnetic poles, said plurality of magnetic poles and said electrical windings mounted on the magnetic poles being located in enclosed non-magnetic heat conductive housings filled with dielectric ferrofluid, an annular wall dividing said cylindrical housing into a larger lower chamber in which are located said enclosed non-magnetic heat conductive housings and a smaller

upper chamber, said inner wall defining having an inlet to said cooling water flow channel in fluid flow communication with the lower end of said lower chamber and an outlet from said cooling water flow channel in fluid flow communication with the upper end of said upper chamber, a cooling water inlet in fluid flow communication with the upper end of said lower chamber and a cooling water outlet in fluid flow communication with said upper chamber.



ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B22D11/11 F27D23/04 B22D11/115

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

WPI Data, PAJ, EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 165 793 A (CO STEEL INT) 27 December 1985 (1985-12-27) abstract; figures 1-3, 11 page 5, line 18 -page 6, line 20 page 9, line 23 -page 10, line 16	1, 4, 6, 8
A	US 5 863 455 A (SEGAL VLADIMIR) 26 January 1999 (1999-01-26) cited in the application claims 1-11, 16, 20	1-3
A	US 5 898 353 A (CADER TAHIR ET AL) 27 April 1999 (1999-04-27) cited in the application abstract; figure 1	1
	-/-	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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G document member of the same patent family

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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International Application No

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